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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,776	11/21/2003	Nidham Ben Rached	Q102454	2886

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EXAMINER	
MALEK, LEILA	

ART UNIT	PAPER NUMBER
2611	

NOTIFICATION DATE	DELIVERY MODE
07/11/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/719,776	RACHED ET AL.	
	Examiner	Art Unit	
	LEILA MALEK	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06/18/2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4,5,8,10-12,14-17 and 20* is/are rejected.

7)☒ Claim(s) *3,6,7,9,13,18,19 and 21* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 05/06/2008 has been entered.

Response to Arguments

2. Applicants' arguments filed on 05/06/2008 have been fully considered but they are not persuasive.

Applicants' Argument: Applicants argue, on page 9, lines 1-15, that the noise estimate disclosed by DiFazio is not an adaptive detection threshold, and therefore DiFazio fails to teach or suggest the feature "the detection magnitude is compared with an adaptive detection threshold to decide whether the signal burst is detected".

Examiner's Response: In response to applicants' arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir.1986). Examiner asserts that DiFazio discloses detection magnitude (see Fig. 3, the output of block 13) is compared (see comparator 14) with a detection threshold (see the threshold in Fig. 3, wherein DiFazio clearly shows that

second input of the comparator 14 is a threshold) to decide whether the signal burst is detected. DiFazio does not disclose that the detection threshold is adaptive. However, Scott, in the same field of endeavor, discloses a method/apparatus for detecting a signal burst (see the abstract, column 6, lines 52-55, and column 37, second paragraph) transmitted on the initiative of a sender on a radio channel (see column 6, lines 59-63) listened to by a receiver system. Scott further discloses that a detection magnitude is evaluated on the basis of a correlation between a signal received at the receiver system and the predetermined digital sequence (see column 37, paragraphs 2 and 3), wherein the detection magnitude is compared with an adaptive detection threshold to decide whether the signal burst is detected (see column 41, second paragraph). It would have been obvious to one of ordinary skill in the art at the time of invention to modify DiFazio as suggested by Scott to use an adaptive threshold at the burst detector in order to reduce the false alarm rate (see column 39, last paragraph). Therefore the combination of DiFazio and Scott clearly teaches the limitation argued by the Applicants.

Applicants' Argument: Applicants argue, on page 10, lines 3-15, that DiFazio fails to disclose limitation "a detection magnitude is evaluated on the basis of estimated channel parameters and of a correlation between a received signal and a predetermined digital sequence".

Examiner's Response: Examiner respectfully disagrees. Examiner asserts that DiFazio in Figs. 2 and 3 clearly shows that burst detector 10 receives information from channel estimation device 7, and therefore it shows that a detection magnitude is evaluated on the basis of estimated channel parameters. Furthermore, DiFazio shows

that a detection magnitude (see Fig. 3, output of block 13) is evaluated based on the correlation (see block 12, wherein matched filter has been interpreted as correlator) between a received signal (r_1, r_2, ...) and a predetermined digital sequence (see the channel estimation sequence (h_1, h_2,...) at the input of matched filter 12).

Applicants' Argument: Applicants argue, on page 11, last paragraph, that there is no teaching or suggestion in Scott that "the detection magnitude is compared with an adaptive detection threshold to decide whether the signal burst is detected".

Examiner's Response: Examiner respectfully disagrees. Scott discloses a method/apparatus for detecting a signal burst (see the abstract, column 6, lines 52-55, and column 37, second paragraph) transmitted on the initiative of a sender on a radio channel (see column 6, lines 59-63) listened to by a receiver system. Scott further discloses that a detection magnitude is evaluated on the basis of a correlation between a signal received at the receiver system and the predetermined digital sequence (see column 37, paragraphs 2 and 3), wherein the detection magnitude is compared with an adaptive detection threshold to decide whether the signal burst is detected (see column 41, lines 10-57).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over DiFazio (US 2003/0063576), in view of Scott et al. (hereafter, referred as Scott) (US 6,154,486).

As to claims 1 and 11, DiFazio discloses a method/apparatus for detecting a signal burst (see paragraph 0012) transmitted on the initiative of a sender on a radio channel (see paragraph 0027) listened to by a receiver system, the transmitted burst representing a predetermined digital sequence (see paragraph 0003, 0010, and claim 1), in which method/apparatus channel parameters representing a statistical behavior of the radio channel are estimated (see paragraph 0027) and a detection magnitude (i.e. the signal power) is evaluated on the basis of estimated channel parameters (see Figs. 2, 3 and paragraph 0027) and a correlation between a signal received at the receiver system and the predetermined digital sequence (See matched filter 12), wherein the detection magnitude is compared (see comparator 14) with a detection threshold to decide whether the signal burst is detected. DiFazio discloses all the subject matters claimed in claims 1 and 11, except that the detection threshold is adaptive. Scott, in the same field of endeavor, discloses a method/apparatus for detecting a signal burst (see the abstract, column 6, lines 52-55, and column 37, second paragraph) transmitted on the initiative of a sender on a radio channel (see column 6, lines 59-63) listened to by a receiver system. Scott further discloses that a detection magnitude is evaluated on the basis of a correlation between a signal received at the receiver system and the predetermined digital sequence (see column 37, paragraphs 2 and 3), wherein the detection magnitude is compared with an adaptive detection threshold to decide

whether the signal burst is detected (see column 41, second paragraph). It would have been obvious to one of ordinary skill in the art at the time of invention to modify DiFazio as suggested by Scott to use an adaptive threshold at the burst detector in order to reduce the false alarm rate (see column 39, last paragraph).

4. Claims 1, 2, 8, 11, 12, 16, 17, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scott, in view of DiFazio.

As to claims 1 and 11, Scott discloses a method/apparatus for detecting a signal burst (see the abstract, column 6, lines 52-55, and column 37, second paragraph) transmitted on the initiative of a sender on a radio channel (see column 6, lines 59-63) listened to by a receiver system, the transmitted burst representing a predetermined digital sequence (i.e. the preamble) (see column 37, second paragraph), in which method/apparatus channel parameters representing a statistical behavior of the radio channel are estimated (see column 47, lines 25-32) and a detection magnitude is evaluated on the basis of a correlation between a signal received at the receiver system and the predetermined digital sequence (see column 37, paragraphs 2 and 3), wherein the detection magnitude is compared with an adaptive detection threshold to decide whether the signal burst is detected (see column 41, second paragraph). Scott discloses all the subject matters claimed in claims 1 and 11, except that detection magnitude is evaluated on the basis of the estimated channel. DiFazio, in the same field of endeavor, discloses a receiver including a burst detector for detecting when a selected one of the plurality of channels of the communication is received (See the abstract and paragraph 0012). DiFazio further discloses that the receiver (see Fig. 2)

comprises a channel estimation unit 7 connected to the burst detector 10. DiFazio further discloses that the burst detector comprises a matched filter for detecting signal power of the selected one of the channels of the time slots, responsive to the outputs of the channel estimation device (See Fig. 3), and a signal power estimation device, responsive to the matched filter, for generating a signal power estimate of the selected one of the channels of the timeslots (See paragraph 0012). It would have been obvious to one of ordinary skill in the art at the time of invention to modify Scott as suggested by DiFazio (see paragraph 0010) to evaluate detection magnitude on the basis of the estimated channel, in order to make the detection of the burst more reliable.

As to claims 2 and 12, Scott further discloses that a false detection rate for the burst is estimated, over an observation period, and the adaptive detection threshold is varied as a function of the estimated false detection rate (column 40, lines 5-8).

As to claims 8 and 20, Scott further discloses that the signal received is subjected to a filtering matched (see column 37, second paragraph) to the predetermined digital sequence so as to obtain the correlation in the form of a complex signal having a first component on an in-phase path and a second component on a quadrature path (see column 3, lines 46-57).

As to claim 16, Scott further discloses that the receiver system comprises at least one base station and a base station controller (see Fig. 2 and column 6, last paragraph). DiFazio discloses that the means for estimating channel parameters, the means for evaluating the detection magnitude and the means of comparison form part of the base station (see Figs. 2 and 3 and paragraph 0026). Scott and DiFazio do not

expressly disclose that the adaptation means forms at the base station controller, however it is a matter of design choice to perform parts of the burst detection process (e.g. threshold value determination) outside the base station (i.e. inside the base station controller) in order to make the base station smaller.

As to claim 17, Scott discloses that the base station controller is communicating with the base station (see column 6, last paragraph). Therefore, as described in the rejection of claim 16, it would have been obvious to one ordinary skill in the art at the time of invention to perform the adaptation process in the base station controller and the transmit messages for adjusting the detection threshold to the base station, in order to make the base station smaller.

5. Claims 4, 5, 14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scott and DiFazio, further in view of Karlsson et al. (hereafter, referred as Karlsson) (US 2002/0057730).

As to claims 4 and 14, Scott and DiFazio disclose all the subject matters claimed in claims 1 and 11, except that over an observation period, a ratio of a probability of transmission of the burst by a sender to a probability of absence of transmission of the burst is estimated. Karlsson, in the same field endeavor, discloses a method for determining whether a zero rate (i.e. the absence of transmission) or non-zero rate (i.e. the presence of transmission) transmission has occurred (see the abstract and paragraph 0076). Karlsson further discloses that over an estimation period (interpreted as observation period), a ratio of a probability of transmission of the burst by a sender to a probability of absence of transmission of the burst is estimated (see paragraphs 0077-

0080). It would have been obvious to one of ordinary skill in the art at the time of invention to modify Scott and DiFazio to estimate a ratio of a probability of transmission of the burst by a sender to a probability of absence of transmission of the burst, as suggested by Karlsson, in order to detect the signal transmission more accurately (see paragraph 0018).

As to claims 5 and 15, Karlsson further discloses that estimation of the probability ratio comprises a countdown of the number of detections of the burst during the observation period (see paragraphs 0076-0079). It would have been obvious to one of ordinary skill in the art at the time of invention to modify Scott and DiFazio, as suggested by Karlsson, in order to detect the signal transmission more accurately (see paragraph 0018).

6. Claims 10 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Scott and DiFazio, further in view of Bhatoolaul et al. (hereafter, referred as Bhatoolaul) (US 2001/0046864).

As to claims 10 and 22, Scott further discloses that the receiver system belongs to a radio-communication network (see column 6, lines 56-63). Scott and DiFazio disclose all the subject matters claimed in claims 10 and 22, except that the burst is sent so as to request access to the network. Bhatoolaul, in the same field of endeavor, discloses a communication system, which comprises a burst detector (see paragraph 0021). Bhatoolaul further discloses that the burst is sent so as to request access to the network (see paragraphs 0019 and 0021). It would have been obvious to one of ordinary skill in the art at the time of invention to modify Scott and DiFazio to use the

burst as a request access to the network to reduce the probability of interference and collisions between neighboring mobiles simultaneously attempting to access the network via same cell (see paragraph 0003).

Allowable Subject Matter

7. Claims 3, 6, 7, 9, 13, 18, 19, and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leila Malek whose telephone number is 571-272-8731. The examiner can normally be reached on 9AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO

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800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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